

APR/FY06

**KILAUEA MILITARY
RESERVATION
HAWAII**

**Army Defense Environmental
Restoration Program
Installation Action Plan**

Final 26 September 2006

Table of Contents

Table of Contents	1
Statement of Purpose	2
Acronyms	3
 Installation Information	4
Cleanup Program Summary	6
No Further Action IRP Sites Summary	7
 Military Munitions Response Program	9
Summary	10
Contamination Assessment	11
Previous Studies	12
 MMRP Active Sites	13
KILMR-001-R-01, Ka'u Desert Impact and Training Area	14
KILMR-002-R-01, Small Arms Range	15
 MMRP Schedule	16
 MMRP Costs	18
Community Involvement	19

Statement of Purpose

The purpose of the Installation Action Plan (IAP) is to outline the total multi-year Cleanup Program for an installation. The plan identifies environmental cleanup requirements at each site or area of concern, and proposes a comprehensive, installation-wide approach, with associated costs and schedules, to conduct investigations, necessary remedial actions, and long term maintenance.

In an effort to coordinate planning information between the restoration manager, U.S. Army Environmental Center (USAEC), Kilauea Military Reservation, Installation Management Agency-Pacific Area Regional Office (IMA-PARO), executing agencies, regulatory agencies, and the public, an IAP was completed. The IAP is used to track requirements, schedules, and budgets for all major Army installation cleanup programs.

All site-specific funding and schedule information has been prepared according to projected overall Army funding levels and is therefore subject to change.

The following agencies contributed to the FY2006 IAP conducted on 24-27 April 2006:

US Army Environmental Center
EEI for US Army Environmental Center
US Army Garrison Hawaii
ICI for US Army Environmental Center
DIMCO for US Army Engineer Research and Development Center
State of Hawaii Department of Health, HEER Office

Acronyms & Abbreviations

AEC	(United States) Army Environmental Center (formally called USATHMA)
AEDB-R	Army Environmental Database – Restoration
bgs	below ground surface
BRAC	Base realignment and Closure
CC	Compliance Related Cleanup
CERCLA	Comprehensive Environmental Response Compensation and Liability Act (1980)
CTC	Cost-to-Complete
DOD	Department of Defense
EPA	(United States) Environmental Protection Agency
FS	Feasibility Study
FUDS	Formerly Used Defense Sites
FY	Fiscal Year
IAP	Installation Action Plan
IMA-PARO	Installation Management Agency-Pacific Area Regional Office
IRA	Interim Removal Action
IRP	Installation Restoration Program
K	\$1,000
KMC	Kilauea Military Reservation
LUC	Land Use Controls
LTM	Long Term Management
MC	Munitions constituents
MEC	Munitions and explosives of concern
MMRP	Military Munitions Response Program
NE	Not Evaluated
NFA	No Further Action
NPL	National Priorities List
OB/OD	Open Burning / Open Detonation
PA	Preliminary Assessment
RA	Remedial Action
RAB	Restoration Advisory Board
RAC	Remedial Action, Construction
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
REM	Removal
RI	Remedial Investigation
RRSE	Relative Risk Site Evaluation
SI	Site Inspection
TAPP	Technical Assistance for Public Participation
TRC	Technical Review Committee
USACE	United States Army Corps of Engineers
USAEC	U.S. Army Environmental Center
UXO	Unexploded ordnance

Installation Locale: Kilauea Military Reservation or Kilauea Military Camp (KMC) is comprised of approximately 54 acres located on the Island of Hawaii, high atop Kilauea, on the slopes of Mauna Loa, in Hawaii Volcanoes National Park, on the Island of Hawaii. While Kilauea Military Camp occupies about 54 acres of the park's 217,000 acres, its history is as old as Hawaii Volcanoes National Park having been established in the same year 1916. What once began as an idea by Hilo Board of Trade members for a training ground for the National Guard and an Army "vacation and health recruiting station" has become one of Hawaii's most unique resorts for the military. KMC had served as a training facility, housed a Navy camp, hosted numerous dignitaries including General Dwight D. Eisenhower who later became the president of the United States and briefly served as an internment camp and later as a prisoner-of-war camp during World War II. KMC has also experienced the power and destruction of Kilauea Volcano. While the camp still maintains its historical charm, renovations to the camp in the last decade have enhanced KMC's facilities and services making it one of the military's favorite vacation resorts.

Installation Mission: The mission of Kilauea Military Reservation is to provide active military, retired military, reservists, DOD civilians, families and sponsored groups (DOD contractors are allowed to use the facility if they are sponsored) an area for rest and relaxation. There are deluxe cottages, apartments, dormitories and a variety of recreation and services. KMC offers 77 one-, two- and three-bedroom apartments and cottages with all the comforts of home. Each unit includes a mini-refrigerator, microwave, coffee maker, iron and ironing board, hairdryer, and even an umbrella for those unexpected showers. KMC is in a cool, upcountry setting 4,000 feet above sea level, every cottage and apartment is also comfortably equipped with electric heat and a fireplace. It is recommended that visitors dress for fluctuating weather; layers and rain jackets are recommended.

Lead Organization:

Installation Management Agency, Pacific Region

Lead Executing Agency: Installation

Regulatory Participation:

State: Hawaii Department of Health

National Priorities List (NPL) Status: The facility is not on the CERCLA database.

Installation Restoration Advisory Board (RAB)/Technical Review Committee (TRC)/Technical Assistance for Public Participation (TAPP) Status: No RAB/TRC/TAPP has been established at this time.

Installation Program Summaries

IRP

There are no IRP sites at Kilauea Military Reservation.

MMRP

Primary Contaminants of Concern: MEC/MC, Lead, Arsenic

Affected Media of Concern: Soil

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): September 2017
(with indefinite LUCs)

Funding to date (up to FY05): \$ 0

Current year funding (FY06): \$ 203,000

Cost-to-Complete (FY07+): \$241,980,000

BRAC:

There are no BRAC sites at Kilauea Military Reservation.

CC:

There are no CC sites at Kilauea Military Reservation.

Cleanup Program Summary

Installation Historic Activity

There are no IRP sites at Kilauea Military Reservation. To date, only records review has been conducted at the site. There has been no SI activity.

MMRP

Current Activity: A SI phase of work is scheduled FY06 with completion dates of December 2007. Contract has been awarded for the SI phase work. This includes a set of public meetings with an associated workplan.

IRP No Further Action Sites Summary

AEDB-R #	Site Title	Documentation/Reason for NFA	NFA Date
KILMR-01	Shed Behind Bldg 91 (WSC #14)	Study complete. No cleanup required.	199005
KILMR-02	Landfill (WSC #8)	Preliminary Assessment/Site Inspection, Kilauea Military Camp, Hawaii, USACE, May 95	199505
KILMR-03	Prior Waste Disposal Area (WSC #18)	Preliminary Assessment/Site Inspection, Kilauea Military Camp, Hawaii, USACE, May 95	199505
KILMR-13	Stg Sheds (Wood Sheds #254,#80) (WSC #6)	Preliminary Assessment and Site Inspection, Kilauea Military Camp, Hawaii, USACE, Mar 94	199403
KILMR-14	Foam Storage Area (WSC # 7)	Study complete. No cleanup required.	199311
KILMR-15	Former Bio Lab (WSC # 9)	Preliminary Assessment/Site Inspection, Kilauea Military Camp, Hawaii, USACE, May 95	199505
KILMR-18	Septic Tank (WSC # 19)	Study complete. No cleanup required.	199311
KILMR-19	Transformer Storage Site (WSC # 10)	Study complete. No cleanup required.	199605
KILMR-21	UST Building 35	Removal of Underground Fuel Storage Tanks, Tank Site 35, Morrison Knudsen Corporation, KMC, Hawaii, Dec 94	199412
KILMR-22	UST Building 36	Removal of Underground Fuel Storage Tanks, Tank Site 36, Morrison Knudsen Corporation, KMC, Hawaii, Dec 94	199412
KILMR-23	UST Building 86	Removal of Underground Fuel Storage Tanks, Tank Site 86, Morrison Knudsen Corporation, KMC, Hawaii, Dec 94	199412
KILMR-24	UST Building 88	Removal of Underground Fuel Storage Tanks, Tank Site 88, Morrison Knudsen Corporation, KMC, Hawaii, Dec 94	199412
KILMR-25	UST Building 40	Removal of Underground Fuel Storage Tanks, Tank Site 40, Morrison Knudsen Corporation, KMC, Hawaii, Dec 94	199412

AEDB-R #	Site Title	Documentation/Reason for NFA	NFA Date
KILMR-26	UST Building 76	Removal of Underground Fuel Storage Tanks, Tank Site 76, Morrison Knudsen Corporation, KMC, Hawaii, Dec 94	199412
KILMR-28	UST Building 101	Removal of Underground Fuel Storage Tanks, Tank Site 101, Morrison Knudsen Corporation, KMC, Hawaii, Dec 94	199412
KILMR-6	Drum Storage Area (WSC #1)	Not eligible for ER,A Funding	199605
KILMR-7	Above Ground Fuel Oil Tank (WSC #2)	Not eligible for ER,A Funding	199008
KILMR-8	Above Ground Diesel/Kerosene Tanks (WSC #17)	Tank Does Not Exist, Not DERA Funded	199008
KILMR-9	MOGAS USTs (WSC #3)	Not eligible for ER,A Funding	199008

KILAUEA MILITARY RESERVATION

Military Munitions Response Program

MMRP Summary

Total AEDB-R MMRP Sites/AEDB-R sites with Response Complete: 2/0

AEDB-R Site Types

2 Unexploded Munitions/Ordnance

Most Widespread Contaminants of Concern: Arsenic, Lead, MEC/MC

Media of Concern: Soil

Completed REM/IRA/RA: None

Total MMRP Funding

Prior years (up to FY05):	\$	0
Current Year (FY06):	\$	203,000
Future Requirements (FY07+):	\$	241,980,000
Total:		\$242,183,000

Duration of MMRP

Year of MMRP Inception: 2002

Year of MMRP RIP/RC: 2017

Year of MMRP Completion Including LTM: 2047 (with indefinite LUCs)

MMRP Contamination Assessment

MMRP Contamination Assessment Overview

Two MMRP sites have been identified at Kilauea Military Reservation.

Cleanup Exit Strategy:

The SI is scheduled for FY06.

2002

- Final CTT Inventory Report, TechLaw, October

KILAUEA MILITARY RESERVATION

Military Munitions Response Program Site Descriptions

KILMR-001-R-01

KA'U DESERT IMPACT AND TRAINING AREA (KA'U DESERT)

SITE DESCRIPTION

The Ka'u Desert site is a former training area used from approximately 1941 to January 1945 for maneuvers and firing of both heavy and light weapons on what is now a portion of the Volcanoes National Park. Its size has been estimated at 27,274 acres in an area south of the current installation. [Note: No map depicting the Ka'u Desert Impact and Training Area was located and this area is no longer part of the actual installation.] The boundaries were approximated based on topographic features of the land, and the known use. Cone Crater, established as a target area, lies within the boundaries. The Ka'u Desert was used by tank and "destroyer" units.

STATUS

REGULATORY DRIVER: CERCLA

RAC: Moderate

CONTAMINANTS OF CONCERN:

Potential for Lead, MEC and MC

MEDIA OF CONCERN: Soil

PHASES	Start	End
PA	200204	200305
SI	200510	200609
RI/FS	200910	201009
RD	201510	201609
RA(C)	201210	201709
LTM	201710	204709
RC:	201709	

Martial law was lifted on October 24, 1944, and the Army ceased using the Ka'u Desert for training in January of 1945. In June 1949, a Schofield Army Ordnance team traveled to Hawaii to clear artillery shells from the Ka'u Desert Impact and Training Area and attempt to restore the area. It was reported that duds were still being found in the Ka'u Desert in 1955. The extent of UXO concentrations on the range is not known. Local historian, Kent Warshauer, stated that 155 mm artillery rounds, .50 Caliber shells, and land mines have been found in the Ka'u Desert over the years. There have been no known UXO responses at this range site since the 1949 clearance. There is also a former bombing range located within the park, named the K'au Bombing Range, that is part of the FUDS program. The bombing range is not in the same location as the site inventoried here. The bombing range was officially withdrawn for military use. Presently, both of these areas are used for recreational activities.

This site has been recommended for FUDS, Findings of Determination for FUDS (FDE) Task 1.

Groundwater is located approximately 4000 feet bgs and it can be assumed that groundwater contamination may not be of immediate concern.

CLEANUP STRATEGY

Groundwater is located approximately 4000 feet bgs and it can be assumed that groundwater contamination may not be of immediate concern but may be addressed during the RI if deemed necessary.

KILMR-002-R-01

SMALL ARMS RANGE

SITE DESCRIPTION

This former small arms range, comprising approximately 20 acres, is located at the Keanakako'i Crater, within Volcanoes National Park. The public is not allowed access to the crater. A local historian provided information regarding the location of this range. It was assumed that this range was used from 1941 - 1945, and that small arms munitions were used. Several documents were collected that referenced both rifle and pistol training activity near KMC, but the specific locations were not provided. There have been no known response actions at this range.

Groundwater is located approximately 4000 feet bgs and it can be assumed that groundwater contamination may not be of immediate concern.

CLEANUP STRATEGY

Groundwater is located approximately 4000 feet bgs and it can be assumed that groundwater contamination may not be of immediate concern but may be addressed during the RI if deemed necessary.

STATUS

REGULATORY DRIVER: CERCLA

RAC: Negligible Risk

CONTAMINANTS OF CONCERN:

Lead

MEDIA OF CONCERN: Soil

PHASES	Start	End
PA	200204	200305
RI/FS	200910	201009
RD	201410	201509
RA(C)	201510	201609
RC:	201609	

Initiation of MMRP: 200204

Past Phase Completion Milestones

PA - 200305

Projected ROD/DD Approval Dates: Unknown

Projected Construction Completion: 201709

Schedule for Five Year Reviews: Unknown

Estimated Completion Date of MMRP including LTM: Indefinite LUCs

KILAUEA MILITARY RESERVATION MMRP IAP SCHEDULE

(Based on current funding)

AEDBR#	Phase	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15+
KILMR-001-R-01	SI									
	RIFS									
	RD									201609
	RAC									201709
	LTM									204709
KILMR-002-R-01	RIFS									
	RD									201509
	RAC									201609

Prior Years Funds**Total Funding up to FY04: \$ 0****Total Funding up to FY05: \$ 0*****Current Year Requirements***

Year	Site Information	Expenditures	FY Total
FY06	SI		\$203,000

Total Funding FY06: \$203K***Total Future Requirements: \$241,980K******Total MMR Program Cost (from inception to completion of the MMRP): \$242,183K***

Interest of a RAB will be solicited when the RI commences.